

# The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

VOL. LI  
No. 1322

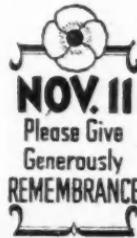
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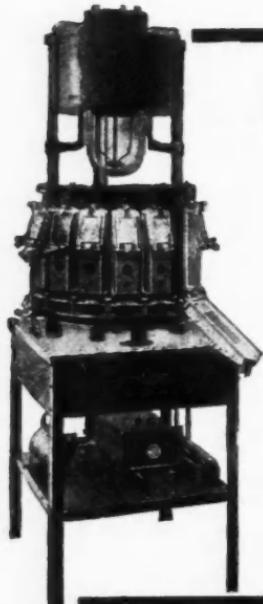
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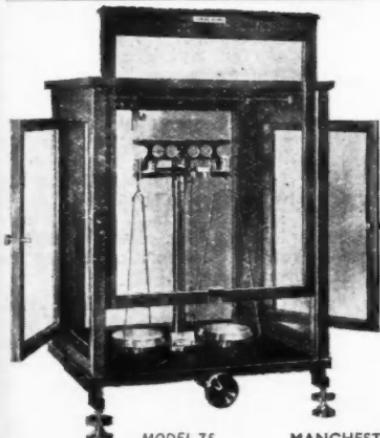
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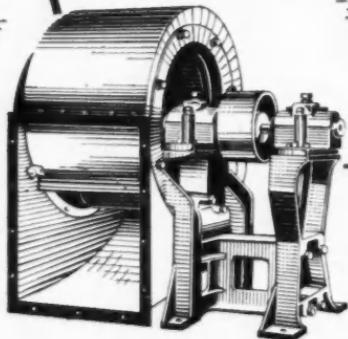
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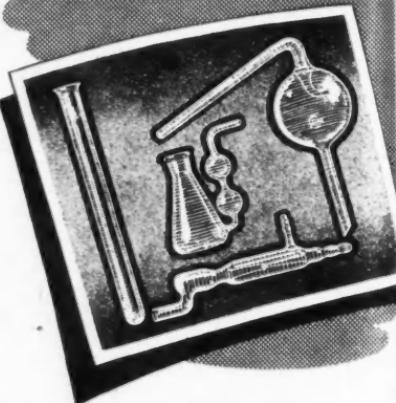
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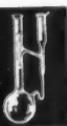
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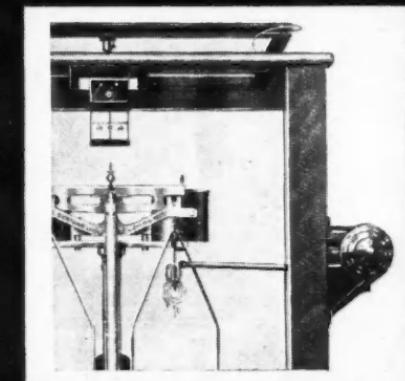
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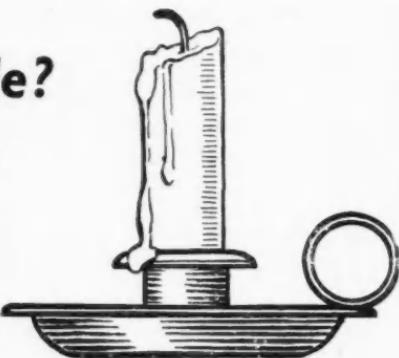
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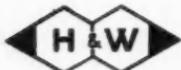
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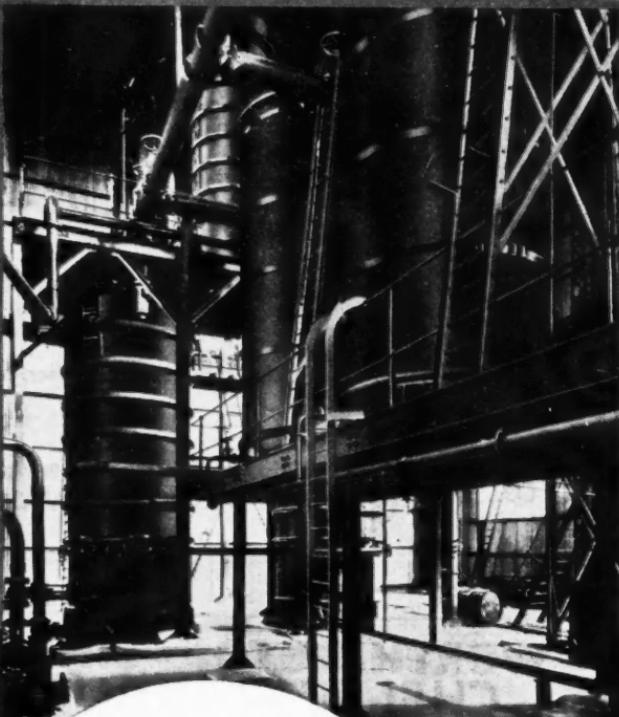
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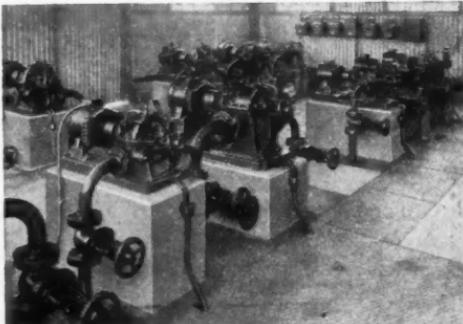
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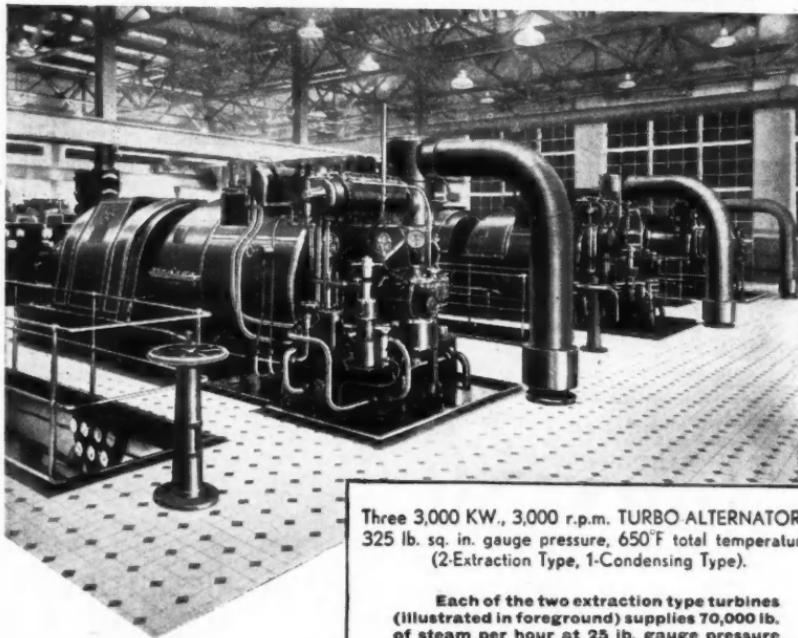
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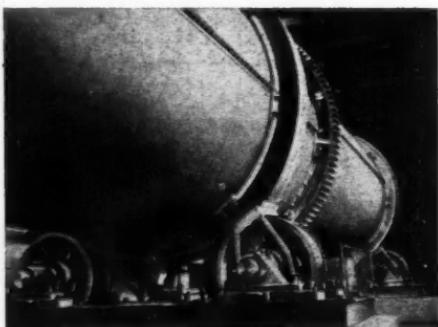
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## Factory Welfare

MAN spends by far the greater part of his waking hours at his place of work. Since it was said to Adam "In the sweat of thy brow shalt thou eat bread," the majority of mankind has considered work a penance. There have been always a few superior souls whose work has so fascinated them that their life's interest has lain in their work. Of such are most scientific workers, and perhaps more are to be included in this category to-day than ever before. But the majority of people still find in their work a certain monotony which is relieved only because several people are doing the same thing together and a modicum of cheerful chatter can relieve boredom. This may be taking a depressing view of the general attitude, but the fact remains that the day's work can be made much more interesting and much more agreeable by skilled management. It is here that the newer technique of factory welfare comes into play.

There is little doubt that the physical conditions of factory life are being revolutionised. We do not refer only to the use of gramophone records playing light music, and so forth, in certain factories. We are doubtful whether that method is indeed wholly acceptable because no one type of

music is wholly acceptable. We can ourselves imagine few more disagreeable ways of spending a day than doing a monotonous routine job to the accompaniment of a strident dance band; there are others who hold a contrary opinion. At the same time relaxation during the hours of work can be usefully employed.

A faith in a better industrial England is taking root. There are, of course, many things which managements are compelled to do by law; and these things, such as the provision of canteens in factories with more than 250 workpeople, and the measures for ensuring hygiene, safety and welfare contained in the Factory Code, together with the steps taken for the conquest of industrial diseases, have made a vast improvement in industrial conditions. These, however, are not enough.

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We are coming to regard as essential a host of other measures which are not compulsory. These result in the voluntary addition of amenities to improve the conditions, the working environment, and the social surroundings of the worker. Welfare work has been described as "non-compulsory extras."

It has been the task of the higher management so to direct the affairs of a company that it remains prosperous. So far as the

workpeople are concerned, however, management in the past was little more than routine engagement and discharge of workpeople, placing them in particular jobs, and then ordering them about. This limited idea is fast disappearing. It is now considered that management should have a much higher and wider scope. In essence, the newer management aims at taking into the lives of the staff and workpeople something of the spirit in which a good employer of the old family type of business dealt with his employees. The personal touch is being re-established.

This rather difficult job can be done in small works by the management itself, but in large works it is customary to employ a welfare officer to look after it. Unfortunately, there is a rather considerable shortage of welfare officers and this is undoubtedly a new career on which many will find it desirable to embark when the war is over. Sympathy, tact, and the ability to create the team spirit will all rank high in the qualifications required. The work will be further aided by expert medical supervision of all factory workers. The methods and practices of welfare work are diverse and cannot be standardised. It has much to do with the physical conditions of work and leisure, but it comprises more than the sum of all the material circumstances of a man's employment. Staff management with its insistence on the importance of right factory relations can introduce a new sphere of industrial collaboration between executive and employees.

Methods which suit this country will not necessarily suit other countries, but while there are comparatively few published examples of what is being done over here there are a great many examples, to be obtained from the press, of what is being done in other countries. Among these we take just one example—a South American factory in what is considered a rather backward part of the world. New employees there are usually selected because someone in the factory, who may be no higher than a labourer, has recommended them. In this way the factory staff is built up of friends. Every employee can have free physical examination at an excellently equipped plant clinic so that those people who would only see a doctor if they were really ill can now be kept in good health. There are also free dentistry, shower baths, and foot

baths with free soap and towels, and working clothes are supplied gratis. In this particular factory it is possible to give a quota of work to be done in a particular time. If the output is obtained in less than that time the team responsible can go home as soon as it is done, with the result that the lazy ones are not prodded into activity by the foremen, but by each other. This factory has schools in which the employee can obtain education free of charge after the day's work is over, the course being such as will fit the employee either for a higher grade of employment or to make better use of his or her leisure time. A school of music is attached, and as a result the works runs a large band that plays at the works cafeteria and gives concerts in the evening. Attached to the organisation is a school of dramatic art, the students of which entertain their fellow workers with dramatic and musical presentations. Good wages are paid, but in addition there is a loan fund which helps workers out of financial difficulties and assists them to buy their own houses. Two weeks of vacation with pay are given and there is a company store that sells necessities at cost.

We do not suggest that there is anything unique in these details of modern welfare work in America. What is remarkable, however, is the extent to which it is practised and the wholesale scale on which large companies undertake welfare activities. In this country, of course, sport is an essential and important part of welfare work and a great deal of works spirit can be secured by a good and efficient works football, cricket, tennis, bowls and other teams and by providing a fishing club and many other similar sporting activities, not forgetting golf.

There is little doubt that welfare work will aim at keeping the employees together as a team, by providing amusement or instruction for those who require to have their leisure hours filled, by looking after the employees' health, and in other ways, some perhaps not yet explored. Under such conditions industrial efficiency must improve and a great opportunity will be given of educating the workers in the importance of their work and in the need for putting forward their best efforts. Employers generally will do well to watch this new movement carefully and to adopt it so far as lies in their power.

## NOTES AND COMMENTS

### British Exports

THE recent modifications in the physical black-out have now been followed by an equally welcome change in the statistical black-out imposed by the Board of Trade for security reasons in March, 1941. It is gratifying to see that the demand for the resumption of the publication of statistical data, voiced in both Houses of Parliament and in the Press, has now met with success. The White Paper, issued by the Board of Trade, giving export figures since 1938, is, indeed, a measure of the country's achievements on the fronts and in the factories. With a growing appreciation of the importance of statistics in Government and in industry alike, it is to be hoped that the resumption of export statistics will soon be followed by the publication of other equally important data. In 1943, the value of exports—excluding Government-owned munitions—was 51 per cent. lower than in 1938. In the same period, export prices rose by 71 per cent. The export volume was, in 1942, only 36 per cent. of that of 1938 and by 1943 it had declined further to 29 per cent. In other words, U.K. exports in 1938 represented 10.2 per cent. of the national income, as compared with 8.9 per cent. in the following year, 6.9 per cent. in 1940, and 5.3, 3.5 and 2.8 per cent. in 1941, 1942, and 1943.

### Chemical Markets Retained

HOWEVER, while the total corrected value of exports fell from £470.8 million in 1938—not a very good export year—to £269.5 million and £232.2 million in 1942 and 1943, respectively, it is significant that certain industries, including the chemical industry, have been able to keep some of their markets and, as a consequence, do not show so heavy a decline in exports as do coal, vehicles, and machinery, which declined by 90, 91, and 71 per cent. The value of exports of chemicals, drugs, dyes and colours is one of the few items showing an increase, in this case from £22,060,000 in 1938 to £23,755,000 in 1942, and further to £27,531,000 last year. Exports of pottery, glass, abrasives, etc., also fared well; while the 1942 level of £11,432,000 could not be maintained in the following year, when exports ag-

gregated £9,055,000, compared with the 1938 figure of £9,610,000, this decline is relatively small. Rayon exports make the best showing; they rose from £5,502,000 in 1938 to £12,674,000 last year. The value of exports of oils, fats and resins, in contrast, is down to £695,000 from a 1938 level of £5,305,000. There was also a decline of nearly 50 per cent. in non-ferrous exports, last year's figure being £6,550,000, as compared with £12,339,000 before the war. The heavy decline in exports of Britain's "classical" export goods, such as coal, cotton, textiles and machinery, noticeable for a number of years before the war, has become yet more pronounced, while figures for the exports of relatively new industries, producing more specialised products, augur well for the future. A careful study of Britain's export statistics—supplemented by a later release (it is hoped) of Britain's import figures—should be made by every industrialist.

### "Waste" in the Post-War Plan

PACE, as we all well know, will dawn on a world faced with a shortage of many essential raw materials, and the chaos produced by world-wide war will mean that some materials will not be available for a long time. To this must be added the fact that Britain has already parted with £1000 million of overseas assets and incurred £2000 million of undischarged overseas liabilities. Conditions like these are going to make our import trade difficult; the answer seems to be that we shall have to make the most of such materials as we can find at home—a work in which chemists may find a challenge to their knowledge and ingenuity. There is a wide field for research outside phenols, the glyptals, and the acetylene family. Substitute raw materials may be found in the most unlikely places. For example, diesel fuel has been produced from dry-cleaning stills residue, and building material from dust from gas-producer plant. A substitute material, whether from "waste" or other sources, is not necessarily inferior; it may be quite as satisfactory as the original, and has often proved superior. Uses have been found for "waste" as

widely different as bean husks, fluff from khaki-webbing manufacture, coal dust, and cows' bladders. Any waste—solid, liquid, or gas—either as it is, or processed, may be a potential raw material for industry. Untold wealth has been lost by the non-utilisation of "waste" in industry. At least two surveys of the subject were undertaken in the U.S.A. before the war. More recently, the Ministry of Supply has launched a scheme for the formation of Industrial Salvage Groups in all parts of the country. The Department of Salvage and Recovery (Industrial) of the Ministry of Supply is always prepared to give advice and information on the subject.

### The Future of Electrochemistry

**G**REAT advances in the applications of electrochemistry after the war were forecast by Mr. R. M. Burns, of the Bell Telephone Laboratories, in a recent address to the Electrochemical Society of America. He claims that in the post-war world electrochemists should create new products and new industries, and by improvement of processes and efficiency should lower the cost of existing products and extend their distribution. Not unexpectedly, he presages a slight recession immediately the war ends, as a result of decreased power requirements in the electro-process industries, but he believes that the present level will be reached, and surpassed, within five years of the end of the war. It is well to examine some of the reasons he adduces for his prediction, with a view to possible repercussions on industry in this country. The American automobile industry, he says, will need, within three years of victory, an aluminium production equal to three-quarters of present-day output. Magnesium will be needed for aircraft, engraving plates, household fitments, etc. Redesign of railway equipment will make large demands on alloy steel, and rapid electroplating of steel strip with zinc, tin, and other metals will be widely extended. An ever-increasing production of calcium carbide will be essential to meet the growing variety and quantity of plastics and synthetic organics, many of which will themselves be produced by electrolytic reactions. Finally, electric methods in the recovery of ores, and electronic devices in the field of communications will expand vastly in im-

portance. Just as the chemical industry proper in America was revolutionised as a result of the last war, so the electrochemical industry may expect to develop at the close of the present conflict.

### BRITISH STANDARDS INSTITUTION

At the annual general meeting of the British Standards Institution, held on October 17 (see also p. 425). Sir Percy Ashley briefly reviewed the work done as a direct aid to the war effort and the progress made during the same period in the preparation of British Standards for industrial and commercial materials and appliances, Packaging Schedules and Codes—a packaging code for tropical climates being now in preparation—and standards for many other materials, tools and appliances for several Ministries and for the Services. Many of the war emergency standards had been made compulsory.

The preparation of standards for building materials and appliances was now being carried out, and many other standards were under consideration.

Dr. E. F. Armstrong, chairman of the finance committee, explained that the income and expenditure for the year had increased by 28 per cent. and was now about £69,000 and that the Government grant-in-aid had been increased to £12,900. While there was an increase of some 15 per cent. in the number of subscribing members, he referred to the need for greater support from local authorities and industry.

### LETTER TO THE EDITOR

#### International Patents

SIR.—In reference to your note (THE CHEMICAL AGE, July 15, p. 49) on my article on "An International Patent Office," which appeared in the *Central European Observer* of June 23, 1944, there is one point in my article which I should like to emphasise: the International Patent Office as suggested by me would limit its activities to the examination of the novelty of the invention, and would communicate the result to the national patent office where the application was filed. The granting of patents (and, of course, also of licences of right, etc.) should be left to the national patent offices on the basis of their respective national patent laws. Thus, any levelling-up of the various patent laws would not be a prerequisite of the scheme suggested by me. As a matter of fact what I suggested was not "International Patents" but "An International Patent Office."—Yours faithfully,

S. MITTLER, A.F.R.Ae.S.,  
A.M.I.Mech.E.

# Association of British Chemical Manufacturers

## Dr. Isherwood's Comprehensive Survey

THE 28th annual general meeting of the Association of British Chemical Manufacturers was held in London on October 12, with Dr. P. C. C. Isherwood, O.B.E., in the chair.

After having moved the adoption of the annual report and of the statement of accounts for the year ended May 31, 1944, the chairman referred, first of all, to the great loss they had sustained by the death of Dr. Pyman, who served as chairman of Group B from 1932-1934 and as chairman of the Medicinal Chemicals Sub-Group until his decease.

"We meet this year under conditions more promising than at any previous meeting since 1938," the chairman commenced, "and I think that the chemical industry can claim that it has played an important part in making possible the successes of our fighting forces. Looking back on the position of our industry in 1914 as compared with 1939, it is manifest that the progress made between the two wars has been very great. It may be interesting to mention some of the more important factors which brought about this result, among which the existence of the A.B.C.M. was by no means the least; it has provided a common forum for all engaged in chemical manufacture. The psychological effect has been great, particularly by bringing together, for frank and free discussion, the leaders of the industry, not only in their own particular branches, but also in those of other spheres of chemical activity. Jealousies have, on closer acquaintance, been swept away and team spirit in the chemical industry is to-day on a very high plane."

"It was mainly, if not wholly, through the co-operative effort between members that the Safeguarding of Industries Act and the Dyestuffs Act were placed on the Statute Book. By reason of the provisions of these Acts, long-term planning could be undertaken and, unlike at the commencement of the last war, when inefficient improvising was the order of the day, the Ministry of Supply and other Service departments found an efficient industry able to pass smoothly from peace to war conditions.

### Looking Ahead

"So far I have referred to the past," Dr. Isherwood continued, "but I venture

Dr. P. C. C.  
Isherwood.



to forecast an infinitely more important future rôle for the Association. Few who are in a position to assess correctly the trend of political thought will doubt the advisability, nay the necessity, of broadening and deepening the functions of the Association. For example, one matter which is intimately connected with this question is the co-operation of British chemical manufacturers with chemical interests and organisations overseas. The Council is considering the desirability of forming Empire Sections of the Association and establishing branch offices in the Dominions. Incidentally, there has been recently a request for assistance of this kind from India, and the position is being thoroughly investigated on the spot. The Council is satisfied that the Association can play an important part in overseas chemical industry by contributing, from its experience, useful guidance in a co-operative spirit. For all those activities we shall require to be in a position to attract to our permanent staff men of the highest calibre and make the various positions sufficiently attractive for them to regard them as a career. In this connection, provision of the pension scheme, which was put into force this year, is a step in the right direction. With enlarged functions and services, we may find it desirable to alter our ideas with regard to the provision of Association finance, but I think any increased subscriptions will be amply justified by results.

### Interest in Education

"Turning to the industry as a whole, progress has been great and substantial, but there is no cause for complacency. The post-war years will be a trying time for the chemical industry. Other countries have not been idle, and we must see to it that upon the foundations already laid, an efficient, progressive and scientific up-to-date edifice, is built."

To attain this, I place in a very high

category the quality of the personnel which the industry must attract. This means that we should work in the closest possible touch with universities, technical colleges, and secondary schools, and industry must take a far closer interest in the education and training of its potential recruits than in the past. The success of an industry depends on the men in it, from the top to the bottom, and I therefore make the suggestion that the chemical industry should, as far as possible, take an increasing interest, both advisory and financial, in educational matters.

"Another direction in which I think we should proceed, is to prevent, as far as possible, wasteful overlapping in manufacture between individual firms. Much has already been done, but there is room for more. This can, of course, be accomplished by mergers, but I am one who believes that there is still room for the comparatively small unit, provided always that it develops in an efficient and logical direction, paying due regard to what other similar concerns are doing. The A.B.C.M. provides a means for such an exchange of information, and I trust that this will be used to a far greater extent than has been the case in the past. The scheme which the Association operates is quite a simple one; it is absolutely confidential and, while giving freedom of action, it does prevent wasteful overlapping of effort and provides an opportunity for co-operative development."

### Industrial Statistics

The chairman then referred to the Association's attitude to industrial statistics. "Your Council has expressed the view," he said, "which I am sure is endorsed by all members, that if industry is to play the part expected of it by the Government, it must be provided with all the necessary statistical data, which, in the main, must come from official sources. Thus, import and export statistics should be provided by the Government, and above all, must be available promptly and in all necessary detail. The compilation and supply of these returns should be part of the prime service of H.M. Customs and Excise and not, as in the past, done in spare time by certain officials. These overseas trade data should not be spoilt by the practice of suppressions, even though there may be occasions when it would suit an importer or exporter if data relating to a particular consignment were suppressed. I am glad, however, that the members of the Association have concluded that on balance, if there is complete disclosure, more will be gained than lost. As regards the provision of production data, there should be again as much disclosure and promptitude as is compatible with the national interest. Many sections of the industry are already arranging

to supply data to the office of the Association and this will be in considerably more detail than we can reasonably expect a Government to adopt."

### Hydrocarbon Oils

Turning to the subject of hydrocarbon oil duties, Dr. Isherwood pointed out that a Government Committee has been set up and that the Association is at present in touch with its members consuming hydrocarbon oils which, by reason of the import duty on oils, or as the case may be, the permissive effect of such duty on the price of home-produced oils, makes them, to that extent, higher than world prices. A statement on behalf of consumer members is being prepared by the Association for submission to the Committee. "I understand," he continued, "the producers are presenting their case through other organisations. These hydrocarbon oils, whether from coal, oil, or wood, are basic raw materials for the organic chemical industry. In my view, the cracking of crude oil in this country should be undertaken, mainly because I believe we are only on the threshold of discovery of what chemical products can be obtained by synthesis from petroleum sources. Unless this industry is located here, research and development based on these materials will not be undertaken. I do not consider that petroleum oil products are necessarily competitive with those from coal, but rather are complementary. Broadly speaking, we should endeavour to import materials as low down the scale as possible and convert them to the highest practicable degree, so as to have the greatest 'spread' between the value of imports and exports, with the object of providing skilled work for our people and to pay for our imported food."

"One effect of the hope for an early end of the European war is the increased interest of Government departments in post-war reconstruction. Our inquiries last year provided them with a broad picture of the total needs of the various sections of the industry and now various departments are beginning to inquire into the details of the aspects which are their particular concern. I trust that we may expect, in the not too distant future, at least provisional decisions on some of the numerous questions which must be answered before the industry can make its own detailed plans."

### Exports

"The chemical industry is particularly interested in the export trade, not only directly, but also indirectly, since chemicals enter into practically every class of goods from cosmetics to automobiles. I therefore make no apology for urging the Government to translate pronouncements of academic idealism into concrete proposals of

policy. Further, we need at the earliest possible date an overhaul of our present controlled export licensing system, subject, of course, only to limitations due to the war, but even in this connection we should guard against the war effort being made an excuse for mental apathy and unnecessary procrastination. I would also urge upon the Treasury a more liberal conception in the provision of foreign exchange to allow for the immediate import of essential raw materials, particularly where it can be shown that an immediate export will offset such exchange many times over. Capture or re-capture of foreign markets takes much time, and in my view the end of the European war may well be too late if we are not to be handicapped as compared with other more fortunately placed countries."

### Points from the Report

The Association has continued to work in close contact with Government departments and with the departments operating the import and export licensing procedure, and its technical knowledge and experience have again been called upon extensively during the year in connection with control and rationing schemes for chemicals.

Replies were submitted from the various groups and affiliated bodies of the A.B.C.M. to the Ministry of Supply inquiry on immediate post-armistice problems mentioned in last year's report. The reports were entirely factual and set forth in broad outline the estimated needs of the various sections of the industry for numbers of workers, the categories required for early release to facilitate orderly resumption of production, and the finance and materials required for repair and restoration of plant and buildings and for expansion of production. Reports on longer range post-war reconstruction problems have been submitted to the Council by Groups A (heavy chemicals), B (fine chemicals) and D (dyestuffs), and the two latter have been forwarded to the Board of Trade. Group C's interests are being covered by the discussions of the Association of Tar Distillers on this subject. The remaining Groups E (soap, oils and fats), F (pest control products) and G (miscellaneous) will be covered through other groups or affiliated associations.

The Council of the Association reviewed the current and prospective position in regard to import statistics for K.I.D. chemicals and came to the conclusion that it was an obligation on the Government, as part of its contribution to the post-war rebuilding of trade, to provide such statistical information. It therefore decided that the purchase of these returns, which were in any case now very far from complete because of heavy suppressions of data, should cease, but that strong representations be

made in due course for the free supply to industry of complete import statistics.

A special memorandum on the post-war distribution of tar products was prepared for the Ministry of Fuel and Power and a joint post-war planning committee has been set up with the Ministry.

The reorganisation of the Chemical Division of the British Standards Institution, on the basis of industry committees, was completed during the year, and the Association contributed the necessary nominations to the industry committees.

The Council of the Association supported an appeal by the Chemical Council for further funds on the basis that they would be used to improve the publications of its constituent bodies and for the support of the library of the Chemical Society. In the opinion of the Chemical Council the response to this appeal has been specially satisfactory. In view of certain criticisms by some members of Council of the quality of the publications a report on the efforts which are being made to improve them has been called for from the Chemical Council.

### Overseas Relations

Council and Group B have had under consideration an application by an Indian group of representatives of certain members of the Association for recognition as the Indian branch of the Association. The restriction of membership of the Indian group to firms operating there through sole representatives, as distinct from firms working through agents made it impossible to accede to this request. On the other hand, the high importance of the Indian market to most members of the Association was not overlooked and the Indian group has been informed of the Association's desire to collaborate with it as far as is possible.

The consideration of the above particular case has led the Council to consideration of the Association's general relationship with British chemical interests overseas and the questions on the one hand of co-operating with local chemical industries, and on the other of establishing adequate local representation to ensure that the interests of exporting members are looked after on the spot. A special sub-committee has been appointed to survey these matters and to make recommendations to Council. The Council has expressed the general view that, as industrialisation will proceed inevitably in many countries abroad, such developments should not be looked on solely from the point of view of competition with this country, but that they would help to create demands for other products not manufactured locally. The Council accordingly considers that in principle it is desirable for this country to co-operate in, and thus influence, developments abroad, the detailed

execution of this policy being a matter for individual firms.

As the result of representations to the Department of Overseas Trade, the Association received an invitation to co-operate with the Department in the guidance which trade commissioners, etc., should be given in the compilation of their reports on overseas markets. Information is being collected from members for this purpose. It is envisaged that, apart from the improvement of the general trade reports, it will be possible to get reports dealing specifically with the potentialities of each country as a market for chemicals.

The Association, by invitation, nominated two representatives of chemical manufacturers to the Chemistry Education Advisory Board, convened under the aegis of the Royal Institute of Chemistry to consider all aspects of education in chemistry.

A service designed to bring to light information of a non-confidential nature which is lying idle in the hands of some members, but which would be useful to others, was introduced towards the end of 1943. Problems are submitted by members as they arise, and are circulated to all members with a request for information likely to contribute to their solution. Ten inquiries have so far been dealt with.

### Research and Patents

A sub-committee is considering the whole question of research in the chemical industry, with special reference to co-operative research. The Government has been approached to inquire whether assistance could be given in the case of investigations which had passed the laboratory stage and were awaiting the pilot-plant stages, with a view to having everything ready to put such products into production as soon as possible after the armistice.

The Council has arranged for the collection of suggestions for amendments to the Import and Export List and the Census of Production Schedule for the chemical industry, with a view to discussion with the Board of Trade on the improvement and extension of the data available.

The Association has called together a Joint Chemical Committee on Patents to prepare and present evidence to the Departmental Committee on Patent Law set up by the Board of Trade. The Joint Committee comprises representatives of the Association, the Biochemical Society, the British Association of Chemists, the Chemical Society, the Institution of Chemical Engineers, the Royal Institute of Chemistry, the Society of Chemical Industry, and the Wholesale Drug Trade Association.

### Council for the Year

*President*: Dr. E. V. Evans, O.B.E.  
*Vice-presidents*: Dr. E. F. Armstrong,

F.R.S.; Dr. F. H. Carr, C.B.E.; Mr. R. Duncalf; Mr. C. A. Hill, B.Sc.; Mr. C. F. Merriam; Sir David Milne-Watson; Mr. R. G. Perry, C.B.E.; Mr. E. Wallace. *Elected Members*: *Chairman*: Dr. P. C. Isherwood, O.B.E.; *Vice-chairman*: Mr. L. P. O'Brien; *Honorary treasurer*: Mr. C. E. Carey. *Members*: Mr. F. W. Bain, M.C.; Mr. T. R. G. Bennett, Dr. A. E. Everest, Mr. C. G. Hayman, Mr. G. E. Howard, Mr. W. H. Inman, Mr. H. Jephcott, Mr. W. F. Lutyns, Mr. J. H. Olliver, Mr. D. J. W. Orr, Mr. F. M. Roberts, Mr. K. H. Wilson, Mr. H. Yeoman. *Co-opted members*: Mr. A. D. Daysh, Mr. D. Spence, Mr. T. D. Morson, Lord Trent. *Honorary vice-presidents*: Sir Christopher Clayton, C.B.E.; Sir Martin O. Forster, F.R.S.; Mr. N. N. Holden; Lord McGowan. *General manager and secretary*: Mr. J. Davidson Pratt, O.B.E. (seconded for war service). *Joint assistant secretaries and assistant managers*: Mr. R. M. Drake, O.B.E., M.Sc.; Mr. A. J. Holden, B.Sc., F.R.I.C.

Mr. C. G. Hayman and Mr. W. M. Inman are new elected members and Mr. D. Spence is a new co-opted member. The retiring elected member is Mr. W. J. U. Woolecock.

Mr. S. Tuckwood, of Yorkshire Tar Distillers, Ltd., was appointed secretary of the Traffic Committee on October 11, 1943.

### GERMAN PATENTS

The confiscation of German patents as part of the terms of the peace treaty was urged by Mr. Arthur Sugden, secretary of Boots Pure Drug Company, in a paper read before the Nottingham Sales Managers' Association, on October 19.

"At the outbreak of war British manufacturers had to apply under emergency legislation for licences to work enemy patents to supply the country's need of vital products protected by such patents. Unless action is taken every manufacturer in Britain, who has engaged himself in certain branches of production will, after the war, be barred from exporting to any countries covered by world-wide German patents. The same principle applies to trademarks. We cannot afford to be shut out of world markets by the resuscitation and continuance of German trade goodwill through the use of its old trademarks."

Mr. Sugden advocated a simplification of the present licensing system by the adoption of an automatic endorsement as licences of right. "In practice, till the present system is changed," Mr. Sugden concluded, "it is the manufacturing interest which dictates the amount of production, and in the absence of competition largely determines the price."

# South African Chemical Industry

## Production Further Diversified

by Our Cape Town Correspondent

**A**S in many other countries, the impact of the war has led to an expansion of South Africa's chemical industry in order to overcome current supply and shipping difficulties. Many of South Africa's chemical factories have adopted high standards for their products, some employing a competent technical and research staff. Moreover, a number of factories have greatly expanded their activities during the war, necessitating many additions to plant and buildings. South African chemical firms are already giving keen attention to the problem of post-war developments, as many of them have only been able to develop because of wartime shortages of imported chemicals. Although the standard of certain domestically manufactured products is equal to that of the imported article, it is being realised by close observers that the country's chemical industry cannot hope to survive after the war unless it pays far more attention to quality.

### Graphite Developments

Some more recent developments include the production of graphite refractory furnace-cement under a branded name, by a Johannesburg firm. The cement is made for high-temperature furnaces and the makers claim that it will not expand, smoulder, or flake. They also produce graphite protective coating, graphite paint, jointing and facing powder. Another Johannesburg firm is producing iron powder of high grade quality for use in the manufacture of diamond drilling bits as well as in pharmaceutical preparations, which are at present in considerable demand.

The lubricating section of the industry has placed on the market several lubricants and a wide variety of chemical products not made in South Africa before the war, but now marketed throughout the Union and exported to other parts of Africa. These products include wire-rope dressings, gear dressings, liquid belt dressings, and beltdressing sticks, as well as cup, ball, and anti-friction greases.

New lines of chrome green pigments are being produced by a Germiston firm. Edible and technical gelatine and glues are being made by a new Johannesburg establishment, while other factories are manufacturing aeroplane glue for use by the Union Defence Force. This glue has been proved, by practical use in the field, to have advantages that previously were credited only to the imported product. Latex glue has been replaced by new, efficient and well balanced

products, doing an identical job and costing no more than the original product. A Cape Town firm is manufacturing high-grade liquid wax furniture polish, motor-car polish and concentrated teak oil, packed in 8-oz. bottles and sold under a branded name.

Industrial Chemical Products S.A., Ltd., Johannesburg, are manufacturing a chemical for use by spray painters. The chemical forms a protective "glove" on the walls of spray booths so that the paint overspot adheres to the coating instead of to the walls. When the chemical becomes soiled it may be removed with water or scraped off with a knife. This is an American patent which is manufactured in South Africa under licence.

Sulphated oils became unobtainable after the outbreak of war, but the industry soon initiated research on so extensive a scale that it succeeded in producing tanning oils for use in the Union and adjoining territories. In manufacturing these oils only South African raw materials were used. Cutting oils, turkey-red oils, emulsifiers and subsidiary products have also been produced.

### Soaps and Disinfectants

In the cleansing and detergent side of the industry, liquid soaps of plain and antiseptic types are produced; the ammoniated type of liquid soap is used extensively on the mines, in industries and for domestic purposes. A pine soap has been produced specially for use in hospitals. The chemical factories are also making disinfectants, both black and white, of Rideal-Walker coefficients varying from 2 to 6. Scouring powders, heavy-duty cleansers and laundry powders are also being made from the highest-grade raw materials obtainable. Insecticides made in South Africa have proved their worth in the face of the shortage of pyrethrum. A synthetic product now in manufacture is claimed to be more efficient, more lethal, and more stable than pyrethrum extract.

The experimental production from molasses of food yeast, rich in protein and vitamin B, has been satisfactorily carried out at Durban by the staff of the Government Low Temperature Research Laboratory in collaboration with the Industrial Development Corporation. Semi-commercial production is now planned, and the Minister of Economic Development recently visited Durban to discuss the position with representatives of the sugar industry. Although food yeast contains about 50 per-

cent. protein, its chief value lies in its high content of the B group of vitamins, which are lacking in the diet of large sections of South Africa's population. For this reason the Industrial Development Corporation is anxious to ensure that the cost shall be kept as low as possible. An average yearly output of 20,000 tons will be possible without interfering with the existing commercial use of molasses, apart from that normally exported.

As a result of the disastrous floods, the salt position remains serious in the Union. Although in normal times it is possible to produce locally sufficient salt to serve most of the industrial needs of the country, it has now been necessary for the Government to take other measures. One of these was to obtain supplies from the remote Cape Cross in South-West Africa, where abundant supplies of salt occur. The difficulty has been transport, which was overcome by using Army lorries. The Government took the salt shortage so seriously that it issued a short feature film stressing the need for economy in its use. It is hoped that towards the end of 1944, South African pans will again be in production. As no artificial processes are employed in South Africa, the salt industry is entirely dependent upon sunshine for maintaining its supplies. Some of the shortage was undoubtedly caused by the rains which spoilt the salt in the course of formation, as in the salt pans it is only possible for the salt to be produced in the summer months, for in winter there is not sufficient heat for evaporation. When the last supply of salt was being formed, the rain came and undid everything.

## I.C.I. and Company Law

### Disclosure of Ownership

FOUR representatives of Imperial Chemical Industries (the secretary, Mr. J. E. James; the solicitor, Mr. E. A. Bingen—known for his controversy with Lord Trent on the subject of Patent Law Reform—the acting treasurer, Mr. J. L. Armstrong; and the registrar, Mr. R. F. Pennell), recently gave evidence to the Company Law Amendment Committee. The company also submitted a lengthy memorandum.

In this memorandum the company indicates that it sees no objection to no-par-value shares, although it is doubted whether there is any real demand in Great Britain.

The principles of compulsory disclosure of the beneficial ownership of shares and debentures of public and private companies is very desirable, in the public interest, provided that a reasonably convenient and workable scheme can be devised. The company also suggests that the issue of share warrants to bearer should be prohibited.

Another point made by the company is that it should now be made compulsory for every public company with a subsidiary company or companies, where the parent company's interest exceeds 25 per cent. of the issued capital, to provide consolidated accounts. The rights conferred by S.135 of the Companies Act upon members of a company should be exercised in respect of any subsidiary company by members of the parent company as if they were members of that subsidiary company. The Board of Trade should have power to appoint inspectors to investigate the affairs of a company and report.

Furthermore, the company suggests that all persons, firms and companies who undertake the underwriting or placing before the public of offers to subscribe for the capital of companies shall be registered with the Board of Trade and be required to deposit a substantial sum, shall be members of professional associations, and shall be licensed under the Prevention of Fraud (Investments) Act.

The Company's spokesmen do not think that the time has yet arrived to give detailed trading accounts and they oppose the standardisation of accounts. Although they feel that, in general, industrial companies should not have undisclosed inner reserves, there are, they point out, certain cases where it is almost impossible to differentiate between "provisions" and "reserves."

## Chemical Research Gifts to Leeds University

M. CHARLES F. R. BROTHERTON, chairman of Brotherton & Co., Ltd., and a member of Leeds University Court, has offered to subscribe £1000 a year for seven years for the establishment of a research scholarship in physics and chemistry tenable in the university's department of colour, chemistry, and dyeing, and a further £1000 for seven years for a lectureship in chemical engineering in the department of coal, gas, and fuel industries. He has also given £1000 to each of the departments for extra equipment. The Council of the University accepted the gifts last week.

Four years ago Mr. Brotherton provided funds for two entrance scholarships for students in colour chemistry, and later increased his subscriptions to provide for three scholarships. It is because of his gratification at the results of the research work that he has made his new benefactions.

It was also announced that the Yorkshire Dyeware and Chemical Co., Ltd. (of which also Mr. Brotherton is a director), had offered £200 a year for seven years for the development of the department of dyeing, and that the Huddersfield Corporation had renewed its yearly grant of £500.

# “Master Key” Industries

## Breaking German Monopolies

**A**T an open meeting, held under the auspices of the London Section of the British Association of Chemists on October 18, at the Wigmore Hall, the important subject of the safeguarding of key industries was discussed. Mr. Norman Sheldon, A.R.C.S., F.R.I.C., Chairman of the Safeguarding of Key Industries Committee—who set forth the aims of the movement exhaustively in an article in **THE CHEMICAL AGE** of April 22 (p. 373)—moved the following resolution :

This meeting desires to draw the attention of H.M. Government to the importance of giving immediate and special consideration to the maintenance and development in Great Britain of those industries formerly covered by the Safeguarding of Industries Act (Part I). We submit the following points for consideration and suitable action.

These industries are known officially as Key Industries but confusion has arisen owing to the indiscriminate application of the term “Key” to many other industries. We suggest that the title “Master Key industries” more correctly describes their relation to our industrial system.

Imports into Great Britain should be prohibited except under licence.

As these industries are so vital to the prosecution of war the possibility of controlling or prohibiting German production and exports should be investigated immediately.

Economical production and improvements in quality and design would follow from the elimination of unnecessary competition.

Free exchange of information with other countries and avoidance of undue competition in world markets should be considered.

A Central Council representing the manufacturers, the users and the Government should be set up. The issue of import licence, the control of production, advice, concerning the policy towards Germany and the provision of funds for research should be among the functions of this Council.

### Mr. Sheldon's Speech

In his speech, Mr. Sheldon sketched the historical background of his proposals, devoting particular attention to the means and methods by which Germany attained her monopoly position in the world of science. In this connection, reference was made to a book entitled *Germany's Master Plan*, by two American authors, Borkin and Welsh. As a logical step towards the technical disarmament of Germany, he asked that German production apparatus and key equipment should be controlled or prohibited and all exports banned.

Turning to this country, Mr. Sheldon emphasised the importance of having an ample number of well-trained scientific workers who should receive a high salary. As a next step, he asked for improvements in manufacturing methods and for the elimination of wasteful competition. Mr. Sheldon thought that the war had taught us that there must be three main centres of production, viz : this country, the United States, and the Soviet Union, with other countries, such as France and Czechoslovakia, joining in. Britain, just as after the last war, had a unique opportunity of gaining the leadership both in scientific research and in exports of scientific equipment.

In his opinion, tariffs were not a sufficient protection, but the aims he advocates might be secured by the prohibition of imports of “Master Key” material except under licence. Lastly, he suggested the appointment of a Central Council, representing users, manufacturers, and the Government. It would be the Council's task to develop master key industries in the interests of the nation.

Col. W. A. Bristow, F.R.Ae.S., chairman and managing director of Low Temperature Carbonisation, Ltd., who seconded the resolution, referred to the most important recent industrial developments, such as petroleum chemistry, the production of oil from coal, the manufacture of plastics, and others, all of which cannot exist without adequate and efficient apparatus.

Lord Strabolgi, who spoke next, returned to the German problem and, in connection with the Nazi “master-plan,” issued a warning against Germany's cartels—which recently received so much attention in the United States.

The last speaker, Dr. Armstrong, referred to the tremendous needs—estimated at over £100,000,000—for scientific apparatus and equipment of every kind in the liberated countries on the Continent of Europe; he mentioned the important work done in this country by the Conference of Allied Educationalists which will perhaps be given a status similar to that of U.N.R.R.A. He concluded with an eloquent appeal to replace German science and “culture” on the Continent by breaking Germany's monopoly position in the manufacture and supply of key equipment.

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**A new plant** for coal tar distillation and tar acid extraction has been established by the Allied Chemical and Dye Corporation, Ironton, Oregon, U.S.A.

## Organising Industry

F.B.I. Committee's Report

A SPECIAL committee of the Federation of British Industries, under the chairmanship of Sir Charles Bruce-Gardner—who has just been appointed Chief Executive for Industrial Reconstruction—has produced an exhaustive report on the Organisation of British Industry, which was accepted by the Grand Council of the F.B.I. at a meeting on October 11.

Some idea of the breadth of the outlook of the committee may be gauged by the fact that evidence, both written and oral, was collected from no less than 130 associations, one of the fundamental tasks of the inquiry having been to assess the objectives of trade associations and their relations with their members. It is concluded that the existence of trade associations is a national necessity, and their functions are summarised under a dozen heads, chief of which is their duty to act as the official channel of communication between industry and the Government; they should also serve as a kind of balancing mechanism within the industry; as a means of collecting and circulating information; and as a spur to research, both individual and co-operative.

### Lines of Development

As a result of the committee's deliberations, thirteen conclusions have been arrived at, among which the following will probably be regarded as outstanding. Satisfactory co-operation with the Government will be impossible unless industry is adequately organised through trade associations, it being of vital importance that such associations should place, in the forefront of their objectives, service to the nation at large—not merely to members and consumers. The Government should produce only a framework of national economic policy, leaving the details to be filled in by the associations; but, unless industry takes steps to provide organisations suitable for such a purpose, the Government will be compelled to devise methods of its own. It is pointed out that Governments immediately after the war are likely to maintain a close oversight over arrangements which involve the temporary control of output, markets, and prices. An advantageous method of achieving this would seem to be for the Government to set up a national tribunal to which interested bodies could appeal and which would report its findings to the Board of Trade. The final conclusion is that development of trade associations on the lines suggested is a matter of urgent and immediate importance.

In support of its findings, the committee has included, as an appendix to its report, a historical account of the Background of the British Trade Organisation Movement,

outlining the motives and fundamental principles on which trade associations have been formed, and the types and functions of those associations now existing. Such a review is a most useful guide towards the stable planning of future developments.

## Parliamentary Topics

### Degasification of Coal

**I**N the House of Commons last week Mr. J. Griffiths asked the Minister of Fuel and Power if he had considered a report on the experiments made in the U.S.S.R. in the degasification of coal; to what extent such reports indicate that the experiments have been made in the anthracite coalmines and whether he would consider making such experiments in those anthracite seams in West Wales which have had to be closed because of the quantities of gas given off.

**Major Lloyd George:** While my Department has had information about proposals for degasification of coal in the U.S.A., I am not aware of the report relating to experiments in the U.S.S.R. to which the hon. member refers, but if he would send it to me I would have it examined.

### Lime Production

In reply to a question from Sir H. Fildes regarding the production in Scotland of lime for agricultural purposes in 1943 and 1942, Mr. Johnston gave the following figures: for the twelve months ending June, 1942, 1943, and 1944, 110,000, 290,000, and 365,000 tons respectively.

### Location of Industry

**Mr. J. J. Lawson:** who asked the President of the Board of Trade whether he had any definite plans to prohibit the further establishment of factories in areas which were officially declared to have reached saturation point before the war and where heavy building programmes had since been carried out, was informed by Mr. Dalton, in a written reply, that legislation would be introduced next session to give effect to the proposals in the White Paper on Employment Policy.

### Enemy Monopoly Trades

**Sir H. Morris-Jones:** asked the President of the Board of Trade whether he was prepared to specify the category of trades, hitherto the monopoly of Germany and Japan, to which British industrialists were now being invited to turn their attention; and what facilities he was giving for industrialists to make preparations.

**Mr. Dalton:** while saying he would give industrialists any help he could for the purpose asked, recalled his previous statement that manufacturers who wished to undertake preparatory work should state their needs to the Board of Trade.

## Disposal of Factories

### Board of Trade Scheme

THE Board of Trade invites industrialists who, after the war, require space of 10,000 sq. ft. or more in surplus Government factories or storage premises, and who are willing to use them for peace-time industrial purposes, to apply forthwith to the Board of Trade. Application forms may be obtained from the Registrar, Control of Factory and Storage Premises, Neville House, Page Street, London, S.W.1, to whom they should be returned.

Except in special circumstances, factories will not be sold outright, but will be let to a selected contractor for a period of ten years, with an option to the tenant at the end of the ten-year period to take a further long-term lease. The short lease will start from the date ("the date of possession") when the Government is able to release the factory from war work, unless the selected tenant is the present occupier, in which event the short lease can, if the parties so agree, begin at once.

### Terms of Lease

The initial rent payable under the short lease will be such sum as the Valuation Office of the Inland Revenue Department may certify to be the rental value in the open market of the factory calculated on 1939 value. The short lease will provide that either party may at some date between the end of the third and the end of the fifth year of the short lease, to be specified in the short lease, require the rent to be reviewed and put on to the basis of the then current market value to be agreed or, failing agreement, to be settled by arbitration.

Allocations will be made in accordance with certain criteria of national interest, such as: the establishment of a balanced distribution of industry; the re-establishment and expansion of the export trade; the maintenance of a war potential; and the requirements of town and country planning. Furthermore, the ability of individual applicants to make efficient use of the factory premises with the minimum of reconstruction, and the claims, on grounds of equity, of firms whose factories have been damaged or destroyed by enemy action, or have been requisitioned by the State under concentration schemes or otherwise, will be considered.

The short lease, therefore, will contain appropriate safeguards to ensure that the factory is used substantially for the purposes for which it is allocated, will provide that the tenant shall be responsible for all outgoings, and will contain full repairing covenants and also covenants not to assign or to sub-let or, without the lessor's consent, to make structural alterations. It

may, in certain instances, contain provisions relating to the maintenance of fixtures. It will normally cover all buildings, services, and built-in plant. It will be open to the tenant to acquire all, or a substantial part, of the machine tools in the factory (provided they are not lease-lend tools), if he so desires, on terms to be arranged.

If the tenant satisfies the Board of Trade that he genuinely requires for use in connection with his operation of the factory any of the other removable contents, such as shop equipment, furniture, fittings, etc., he may purchase these at prices approved by the departments responsible for the disposal of surplus Government articles in those categories.

## Research in East Africa

### Another Year of Valuable Work

THE latest report of the East African Agricultural Research Institute, at Amani, Tanganyika, describes another year of valuable work towards the agricultural and industrial development of the East African territories. One of the most interesting and successful developments in the year was the opening and operation of a pilot-plant pottery, which was able to turn out serviceable glazed pottery. The pilot plant proved that given a good site near suitable clay, wood-fuel and water, it would be possible for Africans to manufacture glazed domestic pottery at a reasonable price.

Another development of great value was the working of the camphor factory at Lushoto. This factory was run for eighteen months, until the supply of camphor-wood ran out, and in that time supplied nearly 61,400 lb. of crude solid camphor and 30,500 lb. of camphor oil to the Ministry of Supply at a time when normal supplies of natural camphor to Britain had been cut off by the war. Field experiments in cinchona-growing and experiments in methods of extracting quinine were carried on during the year. Some hundreds of analyses of bark from individual trees were made.

The manufacture of soap from cottonseed oil was another interesting experiment. The autoclave process was used successfully and the product yielded a soap sufficiently hard for household use. In several other brauches investigations were carried out which, while not spectacular, will form a valuable basis for big-scale work later. In the soil science survey of parts of the Northern Province of Tanganyika, the rubber chemist carried out a considerable part of the research programme. Finally, a method was developed by the biochemist for manufacturing calcium citrate locally from Seville oranges.

# Gordon Robbins

**W**E deeply regret to announce the death of MR. ALFRED GORDON ROBBINS, chairman of Benn Brothers, Ltd., proprietors of THE CHEMICAL AGE and associated publications, which occurred suddenly on October 10 at his London home. His death, at the age of 61, is a great loss not only to the company but to journalism as a whole, for he had spent over 40 years of his life in the profession and had long been a truly notable figure in it. The eldest son of the late Sir Alfred Robbins, formerly London editor of *The Birmingham Post*, he had the distinction of being the third member of the Robbins family to hold office as President of the Institute of Journalists. He was president in 1942-43.

Educated at the City of London School, Mr. Robbins embarked on his career in the best of all training grounds for the journalist—the provincial press. He began in 1902 on the *Bradford Observer* (now the *Yorkshire Observer*), became chief of the Leeds staff, and then, seeking wider fields, came to London as a reporter on the *Tribune*. Later, for close on 20 years, from 1908 until 1927, he served on *The Times*. He was Parliamentary Correspondent of *The Times* in 1914-20, during which time he was elected chairman of the Parliamentary Journalists' Lobby Committee. He was appointed day editor of *The Times* in 1920, relinquishing that post in 1927 on accepting an invitation from Sir Ernest Benn to become deputy chairman of Benn Brothers, Limited.

Mr. Robbins came into the business of Benn Brothers at a time when great developments and expansion were in prospect. Sir Ernest Benn had just accomplished his oft-expressed aim of lifting the trade and technical press into what he felt to be its rightful place, into Fleet Street in the very hub of the Empire. Bouverie House, the fine new home of all the Benn journals, had just been completed. Mr. Robbins, richly endowed with journalistic experience, entered into his new sphere of activity with the firm conviction that he could find no higher form of service than that which he could give to British trade, the life-blood of the nation, through the application of his gifts to the editorial direction of the 15 journals of the company. He came into the business, too, with the firmly established belief that individual enterprise was vital

to the continued flow of the nation's life-blood and to national prosperity. All his experience in the 17 years that followed, right up to the time of his death, confirmed and strengthened that belief, and he laboured ceaselessly for the betterment of the trade and technical journals under his direction, always seeking for the finer service, alike on the editorial and the advertising sides, in the interests of the many thousands of readers of these journals.

Never was there a happier partnership than that which has existed between Sir Ernest Benn, the chief proprietor, and Mr. Robbins, and when three years or so ago Sir Ernest relinquished the chairmanship and Mr. Robbins succeeded him—only the third chairman since the business was established 65 years ago—he paid a generous and well deserved tribute to his successor's years of valued service true to the traditions laid down by Sir John Benn, the founder.

To every member of the large and ever-growing staff during his connection with the company, Mr. Robbins was a warm-hearted friend and colleague, ever ready to help in times of difficulty, always eager and willing to advise and assist the younger generation. His was the ever-open door; he was accessible at all times to every member of the staff, and all have reason to be grateful for the kindly help, advice and wise counsel which he dispensed. He had a genius for developing a sense of responsibility right down to the junior ranks to a truly remarkable degree, and succeeded in making every member of the staff feel that he or she had a job to do and that that job well done was important to the success of the whole undertaking.

By training and natural adaptability he was a first-rate journalist, accurate in everything he did, a polished writer, and possessed of a lofty conception of the duty owed to the public by an unfettered press. In all his journalistic work he held fast to the conviction that the first duty of the craftsman in his profession was honesty of presentation. A vigorous fighter against what he often called the petty bureaucracy, he rendered especially notable service to the cause which all lovers of freedom have at heart, by the pronouncements in his presidential address to the Institute of Journalists. He constantly called for aggressive



Mr. Gordon Robbins.

vigilance against the inroads of bureaucracy, but he held it as fundamental that freedom of the Press could be assured only by the exercise of a high standard of professional conduct.

A man of warm and generous instincts, Mr. Robbins had for many years been active in connection with benevolent work. He was a past chairman and vice-president of the Newspaper Press Fund and had been its honorary treasurer for some years past; and as a Past Master of the Alfred Robbins Lodge of Freemasons, founded in honour of his father, he had continued to work for its interests as almoner. He took a special interest in the fine work of the Boys' Hostel Association, and as a member of its Council rendered invaluable service for many years.

During the war years Mr. Robbins shouldered ever-increasing responsibilities in a way that commanded the admiration of all around him. He was the author of a *A Fleet Street Blitzkrieg Diary*, issued a few months ago, which told the story of the bombing of London in 1940-41 as it affected the newspapers, and he was extraordinarily proud of the fact that throughout that grim and eventful period every issue of the Benn journals came out.

Mr. Robbins leaves a widow, one son, Major Michael Robbins, who is overseas, and one daughter Margaret, serving in the W.A.A.F. The funeral took place at Woldingham last Saturday, and a memorial service was held on Wednesday at St. Dunstan-in-the-West, Fleet Street.

## Personal Notes

**MR. MICHAEL ROMAIN** has been appointed director of public relations at the Ministry of Fuel and Power.

**MR. B. G. MCLELLAN** has been appointed director of the Scottish Seaweed Research Association.

**SIR FRANK SMITH, G.C.B., G.B.E., F.R.S.**, has been appointed chairman of the Road Research Board of the D.S.I.R., in succession to the late Sir Clement Hindley.

**MR. J. G. BENNETT** has resigned from his position as Director of the British Coal Utilisation Research Association, and THE CHEMICAL AGE understands that as yet no successor has been appointed.

**PROFESSOR SIR ROBERT ROBINSON, D.Sc., LL.D., F.R.I.C., F.R.S.**, has been appointed Chairman of the Water Pollution Research Board of the Department of Scientific and Industrial Research, in succession to the late Mr. H. C. Whitehead.

At the annual meeting of the British Standards Institution, **LORD WOOLTON** was elected the first president. **SIR PERCY ASHLEY** was elected vice-president, and **SIR WILLIAM LARKE**, chairman of the general council.

**MR. J. INGLIS** has retired from the chairmanship and the boards of Joseph Crosfield & Sons, Ltd., and William Gossage & Sons, Ltd. His successor as chairman is **MR. W. T. KIPPS**, who has been a director of Crosfields since 1923.

**MR. A. B. DAWSON**, mining engineer to the Cumberland Coal Co. (Whitehaven), Ltd., has been awarded the G. C. Greenwell Bronze Medal of the North of England Institute of Mining and Mechanical Engineers.

**MR. C. M. WHITTAKER** is retiring from the chairmanship of the British Colour Council, but no successor will be appointed until meetings have been held of the members of the Council under the six divisions created. The retirement of **MR. J. A. MILNE**, president of the Council since 1934, has also been announced.

The following were successful in the recent examinations for the Fellowship of the Royal Institute of Chemistry. In Branch A (Inorganic Chemistry) : **GEORGE BEESTON, B.Sc., A.M.I.Chem.E.**, and (with special reference to Cement and Concrete) **GERALD HOPKINSON**.—In Branch C (Organic Chemistry) : **T. C. BEER, J. E. GILL, B.Sc., W. G. LEACH, B.Sc.**—In Branch E (Chemistry, including Microscopy, of Food and Drugs, and of Water) : **N. R. JONES, B.Sc., H. C. MACFARLANE, D. J. PATIENT**.—In Branch F (Agricultural Chemistry) : **CATHERINE W. KING, B.Sc., Ph.D.**—In Branch G (Industrial Chemistry), with special reference to Heavy Chemical By-production in the Gas Industry : **A. I. COLEMAN, B.Sc.**; with special reference to Petroleum : **VICTOR BISKE, B.Sc., F.Inst.Pet.**; with special reference to Sulphuric Acid and Fertilisers : **RALPH WILLIAMS, B.Sc.**; with special reference to Sewage : **W. M. CAMERON**.—In Branch I (Water Supply and the Treatment of Sewage and Trade Effluents) : **MARCUS ROBINSON, B.Sc.** In addition, 35 candidates were successful in the examination in General Chemistry for the Associateship of the Institute.

## Obituary

**MR. A. JAMES THOMAS-BROOME**, who before joining H.M. Forces was on the staff of British Glues & Chemicals, Ltd., Newport, Mon., has been killed in action.

**MR. WILLIAM BAUSCH**, chairman of Bausch and Lomb, has died in New York, aged 84. The last surviving son of Mr. J. J. Bausch, founder of this optical instrument manufacturing company, he was active in the company's scientific research up to the time of his death.

**PROFESSOR FORSYTH JAMES WILSON, D.Sc. (Edin.), Ph.D. (Leipzig), F.R.I.C.**, Freeland Professor of Chemistry at the Royal Technical College, Glasgow, died in

Glasgow on October 17, aged 64. His association with the Royal Technical College dated from 1905, and he had occupied many appointments in the Department of Chemistry. A native of Moffat, Professor Wilson was educated at the universities of Edinburgh and of Leipzig. At the former he was Hope Prize Scholar, and gained a Carnegie research scholarship. On his return to this country, he worked on dyes and their application in the Leeds laboratory of Professor Green, and in 1905 he became chief assistant to Professor Henderson in Glasgow. His service in the last war (when he held a commission in the Highland Light Infantry) included a period as an anti-gas instructor, his final appointment being that of chemical adviser to the 11th Corps. His fellowship of the Royal Institute of Chemistry dates from 1916. Returning to Glasgow, he occupied first the Chair of Inorganic and Analytical Chemistry, then that of Organic Chemistry, before his selection for the Freeland Professorship in 1935. He served on the council of the Royal Institute of Chemistry in 1922-25, 1929-32, and 1935-38, and was chairman of the Glasgow section of the Society of Chemical Industry in 1933-34.

DR. OLAF FREDERICK BLOCH, Hon. LL.D., F.R.I.C., F.R.P.S., for many years chief chemist to Ilford, Ltd., died in London on October 19, aged 72. Born in London of Danish parents, he was educated at the City of London School and Finsbury Technical College. After some years spent in chemical manufacture and research he joined the staff of Ilford, Ltd., in 1910, and thenceforth devoted himself almost exclusively to photographic chemistry, playing a large part in the rapid development and improvement in photographic materials which characterised the early decades of this century. He was appointed chief chemist in 1930, and in the following year was elected president of the Royal Photographic Society. Special photographic materials for scientific applications were his greatest contribution to the progress of his craft, notably the development of materials for the recording of atomic particles—for which work he received the honorary LL.D. degree from Aberdeen University. His writings and lectures did much to spread the knowledge of the advances taking place in scientific photography. Failing health led to his retirement from active business in 1939. He became an associate of the Royal Institute of Chemistry in 1894, and his Fellowship dated from 1901.

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**Courtaulds (Canada)** is constructing a new rayon staple fibre plant at Cornwall, Ont. Annual production is estimated at 8 to 10 million pounds.

## Plant Pest Control

### Approval of Proprietary Products

THE Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland have already invited applications for the official approval of proprietary lead arsenate powders, lead arsenate pastes, lime sulphur washes, miscible tar-oil winter washes, stock emulsion tar-oil winter washes, organo-mercury dry seed dressings, copper sulphates, copper fungicides (exclusive of seed dressings) and derris and lonchocarpus insecticides. Lists of approved products in these groups are published from time to time in *Agriculture* (the Journal of the Ministry of Agriculture).

In addition to further applications in the above groups, the Ministry and the Department are now prepared to receive applications for the official approval of wetters and spreaders. Applicants must be either the manufacturer or the authorised agent under whose name the product is sold. For a product sold and used in Great Britain but manufactured elsewhere, application will be accepted from the authorised selling agent resident in Great Britain. Requests for application forms, including the number of applications to be submitted in each of the above groups, and for particulars of the scheme if required, should be sent to the Secretary of the Advisory Committee, Plant Pathology Laboratory, Milton Road, Harpenden, Herts. A separate form will be required in respect of each proprietary name.

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An offer of £2000 a year for seven years was made on October 24 by Sir Samuel Courtauld to the Congregation of Oxford University, the money to be spent on research into the relative efficiency of small and large-scale businesses and allied problems of industry, to be carried out under the direction of the authorities of Nuffield College. The offer has been accepted.

International agreement has been reached on a uniform standard and unit for penicillin, by the Health Committee of the League of Nations, the formation of which was recorded in our last issue (p. 401). In making the announcement on Friday last week, Sir Henry Dale, P.R.S., chairman of the committee, spoke of the advantage to workers of securing a world-wide standard for dosage. Referring to the "loose talk" about trade rings in the manufacture of penicillin in this country, Sir Henry said that from the very first manufacturers in this country had entered into a friendly agreement to work together, pool all their information, give all their results to the Medical Research Council, and make the manufacture a genuine national effort.

# Unit Processes and Pilot Plant

## A.C.S. Symposium

**A**T the New York meeting of the American Chemical Society, which was held this year on September 11-15, the Divisional of Industrial and Engineering Chemistry opened their side of the proceedings with a series of papers on Unit Processes, abstracts of which, by courtesy of the A.C.S., we are able to reproduce herewith.

Introducing the symposium, the president, Mr. R. Norris Shreve, of Purdue University, Lafayette, Indiana, pointed out that unit processes, by their very definition, are concerned with the equipment in which chemical reactions are carried on. This may be divided into two phases—that representing the pilot-plant stage, and that concerned with the manufacturing establishment itself. Adequate pilot-plant operations enable the factory to be designed properly and to function evenly and economically.

### Oxidation of Hydrocarbons

W. L. Faith, of Kansas State College, spoke on the catalytic vapour-phase oxidation of chlorinated hydrocarbons to maleic and fumaric acids. Using a vanadium pentoxide, he presented data for the oxidation of *n*-butyl chloride, *n*-butyl bromide, 1,2-dichlorobutane, mixed amyl chlorides, dichloropentane, polychloropentanes, *n*-hexyl chloride, and cetyl chloride. The effect of temperature, space velocity, molar air-halide ratio, carrier, diluents, and pressure on the dichloropentane oxidation was determined. Optimum conversions were obtained at 425-450°C. at a space velocity of 50 reciprocal hours. These were 0.35 mole of fumaric acid, and 1.88 moles of hydrochloric acid per mole of dichloropentane. Whether maleic or fumaric acid was obtained depended upon the concentration of hydrochloric acid in the recovery system. The process appears a suitable means of utilising by-product polychlorinated hydrocarbons.

A study of the catalytic vapour-phase oxidation of ethylene was contributed by E. T. McBee, H. B. Hass, and P. A. Wiseman, of Purdue University and Purdue Research Foundation, Lafayette, who used a silver catalyst prepared by coating pieces of corundum with silver oxide. The temperature range investigated was between 225° and 325°C. The products isolated were ethylene oxide, carbon dioxide, and water. It was found that: (1) a large air/ethylene ratio is most favourable for both good yields and conversions; (2) the temperature of optimum yields is somewhat lower than that of optimum conversion; (3) the temperature of operation of the catalyst must be raised as the contact becomes shorter; (4) small

additions of ethylene dichloride to the reactants are desirable, whereas large additions are deleterious; (5) such a catalyst, when deactivated by excess ethylene dichloride, can be revived by raising the operating temperature and passing the reactants over the catalyst simultaneously.

Hass and McBee, with J. W. Churchill, also studied the oxidation of hexadecane. Hexadecane-air mixtures under a pressure of 2000 lb./sq. in. were passed through a reactor at temperatures from 190° to 300°C. The product was analysed for alcohols, aldehydes, ketones, and esters. Since the usual methods of analysis appeared unsatisfactory, the product was catalytically hydrogenated and then analysed for alcohols, acids, and esters. Oxidations at 300°C. were accompanied by soot formation and miniature explosions as evidenced by "knocks." The alcohol content of products obtained by the two-step process of oxidation and hydrogenation was as high as 17 per cent. by weight. The average molecular weight of the alcohols obtained ranged from 130 to 165.

### Glycol Esters

The process of esterification of 2,3-butylene glycol with acetic acid, to give the diacetate which is desired as the material to be pyrolysed to give butadiene, was reported on by N. Schlechter, D. F. Othmer, and S. Marshak, of the Polytechnic Institute of Brooklyn. The rates of esterification at different temperatures of both glycol and the glycol monoester have been determined, using sulphuric acid as catalyst. The reaction was also studied in an excess of glycol diacetate equivalent to the amount which would be present in an extract layer from a liquid extraction column, using butylene glycol diacetate as solvent for the recovery of the glycol. The reaction does not appear to be a single, simple one of a first, second, or third order. A continuous esterification was operated with an entraining agent to withdraw the water formed.

Schlechter and Othmer, with Robert Brand, also examined the pyrolysis of 2,3-butylene glycol diacetate, the final stage in the production of butadiene by this method. Yields were determined under various temperatures, and other operating conditions. Optimum conditions appeared to be a contact time of 7.1 seconds and a temperature of about 585°C. in an atmosphere of nitrogen. The yield at these conditions was 84.9 per cent. conversion to butadiene. Acetic acid recovery was good; and polymerisation of butadiene and formation of unsaturated esters during the pyrolysis reaction seem to

be the most important factor in determining yields, particularly at higher temperatures and higher contact times. The amount of polymerisation was reduced to a minimum by diluting the gases with sufficient nitrogen to reduce the concentration of diacetate in the vapours to about 40 moles per cent. Incomplete pyrolysis and formation of unsaturated esters may be minimised by subsequent passes of the condensate liquor following pyrolysis.

Esterification of butanol and acetic acid was the subject of a paper by E. Leyes and Othmer, who noted that generalisations hitherto used have been based on incomplete data for the design of industrial systems simultaneously reacting components and separating the products of reaction in a rectifying column. A knowledge of the kinetics of the reaction of butanol and acetic acid catalysed by sulphuric acid, coupled with vapour-liquid equilibrium data, should allow the calculation and design of the distillation unit for the combined steps of reaction and separation.

The densities of butanol, acetic acid, and butyl acetate at temperatures from 20°C. to their respective boiling points, were determined to allow estimations of the volumes at the reaction temperatures. The esterification reaction was found to be more complex than that given by the customary equation. The reaction of butanol and sulphuric acid is probably the controlling factor at room temperature; but, at the temperatures above 100°C. used in continuous processing, the esterification reaction was found to be controlling. With an excess of butanol as solvent, the reaction rate was found to be proportional to the square of the acetic acid concentration, up to 75 to 85 per cent. conversion; above this, the normal esterification mass action law controls. The theoretical aspects of the mechanism are compared with the generally accepted Goldschmidt equation for catalytic esterifications.

The effect of catalyst concentration, proportions of reactants, and temperature on the reaction rate constant was also studied, and the results correlated into a single empirical equation for predicting the rate constant from these three quantities with an accuracy of about 9 per cent.

#### Function of Pilot Plant

The use and functions of pilot plants in chemical industries was discussed by C. Vilbrandt, of Virginia Polytechnic Institute. The conversion of laboratory data into plant design data is only one function of the pilot plant. Such a task requires a thorough investigation of basic reactions and reactants, time, temperature, concentration and catalysis factors, raw materials, operations needed, control specifications, safety and health hazards, etc., investigated with the

zeal of a pure researcher, but with the viewpoint of a chemical engineer. The pilot plant also must provide the breakdown of a process into unit operations, selection of suitable equipment, saving of materials, equipment, time, and labour, and also a study of waste recovery or disposal.

The pilot plant must also do development work on alternative raw materials, improvement of products and by-products, lower costs, safety, modernisation of plant, etc. The proper personnel in a pilot plant is the most important feature of its success.

#### Pilot Plant in Action

The two general schemes for pilot-plant work at the Hercules Powder Co. were described by R. P. Carter. The first is a completely flexible group of chemical engineers and chemical engineering equipment designed to undertake pilot-plant construction and studies as the need arises. The second is a permanent installation of equipment designed to do specific jobs of a more or less standardised nature. In the latter case, equipment is maintained for the preparation of resins on a small laboratory scale up to full-scale plant equipment. The ready availability of this series of reactors permits extremely rapid translation of laboratory findings into commercial production.

As an example, suppose that a chemist has developed a new material which is capable of reacting with one of the generally recognised resin components: rosin, glycerol or other polyhydric alcohols, phthalic or maleic anhydride, phenol, formaldehyde, or the like. If, from a preliminary survey, the economics and chemistry appear sound, development work is undertaken using a 1-gal. stainless steel laboratory reactor. If the testing of samples so prepared indicates promising properties, preparation is next carried out in a 25-gal. pilot-plant reactor. Samples prepared at this stage are generally used for large-scale evaluation or preliminary commercial use. After this step has been successfully completed, plant runs are carried out in 400-gal. equipment and then to full-scale production.

H. L. Barnebey, of the Blaw-Knox Company, Pittsburgh, described the building and operating of a pilot plant as one step in an orderly plan of chemical process development. Its usual purpose is to obtain the quantitative data necessary for the design of the production plant. The pilot step is not always necessary and its function in a specific programme should be carefully studied. Before proceeding it must be definitely established that the profit to be gained from commercial operation is commensurate with the cost of the pilot-plant step and construction of the commercial plant. The production unit should be visualised, the quantitative data required

for the final design listed, the pilot unit designed and built to give these data. Operation of the pilot equipment is by chemical engineers rather than research chemists and a valuable opportunity is presented to train future plant operators. The greater an organisation's experience in all phases of process development, the more successful will be the interpretation of data and translation into final plant design.

The importance of data regarding the performance of mixers in pilot plants was stressed by J. H. Rushton (University of Virginia). Both the equilibrium constant and the reaction rate may be greatly affected

by the mixing device used to control the agitation and heat transfer. For reactions involving the liquid phase where mechanical mixers are used, it is essential to employ a mixing device whose performance can be measured and properly interpreted. The data necessary for proper evaluation of performance and translation to larger scale are outlined for the systems involving liquid-liquid, liquid-solid, liquid-gas, and liquid-gas-solid. Mixer performance is dependent on the container shape as well as its own characteristics; thus pilot-plant equipment should be designed around the best operating conditions for the mixer.

## General News

**Five lectures** have been arranged by Birmingham University Extension Lecture Committee on "Science and Medicine."

**The Engineering Industries Association** announces another removal to more commodious premises—the second in three years. The new address is 9 Seymour Street, London, W.I., and the telephone number is WELbeck 2241.

**The I.C.I. Recreation Club**, Widnes, last week entertained a large party of R.A.F. and W.A.A.F. with music, dancing, and games. The chemical workers proved too strong for their Service guests at contests in table-tennis and snooker.

**The Scottish Fertiliser Distribution Committee** reminds farmers that it is desirable to place requirements now with merchants, or, better still, to take possession of the actual fertiliser wherever storage accommodation is available.

**The distinguished Indian scientists** who are now in England visited research stations and laboratories at Cambridge on Monday and Tuesday last, and the Building Research Station at Watford on Wednesday. A tour of the provinces and Scotland will occupy their time during the next three weeks.

**When the technical history** of this war is written it will be found that Britain, with its meagre research equipment, has contributed far more than any other country. Mr. Harry R. Ricardo, president of the Institution of Mechanical Engineers, stated in his presidential address,

**A small quantity of DDT** has been placed at the disposal of the Salford Health Department for testing purposes and will be applied to the disinfection of houses. Salford is the only district outside London to be supplied with this material, as Service needs prevent large quantities from being available for civilian use.

## From Week to Week

**The Royal Society** announces that at a meeting of its council held on October 12 amendments were made to the statutes so as to make it clear that, since the passing of the Sex Disqualification (Removal) Act of 1919, there is no barrier to the admission of women into the Fellowship of the society.

**In Harris and Lewis**, good progress is being made with the organised collection of seaweed, the crofters there co-operating with the commercial companies now engaged on the island. Recent gales have thrown big casts of weed ashore and this has helped considerably. The crofters drag the weed to a collection point and assist in its loading. A guaranteed price has been assured for the next three years.

**A moving tribute** to the late Mr. Gordon Robbins—whose death is recorded elsewhere in our columns—appeared in *The Times* on Saturday last, under the initials "E.B." Readers of THE CHEMICAL AGE will have little difficulty in penetrating the slender disguise and in recognising the sentiments of Sir Ernest Benn, to whom their sympathy will go out in his loss of an old friend and a valued colleague.

**A public inquiry** is to be held at Cheadle (Staffs) on November 1, by order of the Minister of Town and Country Planning, to decide whether it is in the national interest to erect a cement works at Cauldon Low, near the mouth of the Manifold Valley. Objectors to the proposal protest that dust emitted from the works would destroy the beauty of the valley, which is a favourite haunt of ramblers. The promoters of the plan (Associated Portland Cement Manufacturers, Ltd.) claim that the modern system of dust precipitation which is to be installed is so efficient that the emission would be negligible; they state that cement will be needed for the rebuilding programme; and that they have engaged a landscape artist to beautify the site.

## Forthcoming Events

The Royal Institute of Chemistry (Liverpool and N.W. section) meets on **October 28**, at 3 p.m., at the Mining and Technical College, Wigan. Dr. D. H. Hay will give a lecture entitled "Chemotherapy."

A general meeting of the North of England Institute of Mining and Mechanical Engineers will be held in the Lecture Theatre of the Institute, Newcastle-upon-Tyne, at 2.30 p.m., on **October 28**. The retiring president, Lt.-Col. H. E. B. Daniell, will present the medals and prizes for the year and will induct the new president, Major R. W. Anderson, who will deliver his inaugural address.

The Association of Austrian Engineers, Chemists and Scientific Workers in Great Britain meets on **October 29**, at 11.30 a.m., at the Austrian Centre, 63 Eton Avenue, N.W.3, when Dr. F. Berzel, Director of Research, Roche Products, Ltd., will deliver a paper on "Life Saving and Life Preserving Plant Products."

The Electrodepositors' Technical Society will meet at the Northampton Polytechnic, London, E.C.I, on **October 30** at 5.30 p.m., to hear Dr. J. Kronsbein and Mr. A. Smart deliver a paper on "Electrodeposition on Wire."

A symposium on "Post-War Trends in the Rubber Industry" is being held by the London section of the Institution of the Rubber Industry, on **October 30**, at 6.30 p.m., at Caxton Hall. The third paper on the programme deals with "Rubber Chemicals in the Post-War Period," by Mr. T. G. Crane, B.Sc., A.R.C.S.

The Nottingham section of the Society of Chemical Industry, together with the Textile Department of University College, meet on **October 31**, at 6.30 p.m., at University College, when lecture on "Modern Detergents and Wetting-out Agents" will be given by Dr. C. D. Dunbar.

The Huddersfield section of the Royal Institute of Chemistry meets on **October 31**, at 6.30 p.m., in Fields Café, to hear three short talks by Dr. D. Hanson on "Iron as a Nuisance in the Woolen Industry," Dr. H. H. Hodgson on "Some Incidents in Diazo Chemistry," and by Mr. H. Webster Moss on "Thirty Years in the Chemical Industry in Huddersfield."

The inaugural meeting of the Royal Society of Arts will take place, on **November 1**, at 1.45 p.m., when Dr. E. F. Armstrong, president of the Society, will deliver an address entitled "Chemistry in the Service of Man."

A meeting of the Society of Public Analysts and Other Analytical Chemists will be held on **November 1**, at 3 p.m., at the Chemical Society's Rooms, Burlington House, Piccadilly, London, W.1, when the follow-

ing papers will be presented and discussed: "Some Experiences of Micro-biological Assays of Riboflavin, Nicotinic Acid and other Nutrient Factors," by Dr. D. W. Kent-Jones and Mr. M. Meiklejohn, and "A New Method for the Estimation of Micro-quantities of Cyanide and Thiocyanate," by Mr. W. N. Aldridge.

The Yorkshire section of the Institute of Fuel meets at the Royal Victoria Station Hotel, Sheffield, on **November 2**, at 3 p.m., to hear a paper on "Improvements in the Use of Fuels in Everyday Practice," by H. C. Armstrong, M.Inst.C.E.

The Institute of Fuel (South Wales section) meets at the Royal Institution, Swansea, on **November 3**, at 6.30 p.m., when Dr. D. A. Howes, chief research chemist of the Anglo-Iranian Oil Co., will read a paper on "Research in the Petroleum Industry."

The Society of Chemical Industry meets on **November 6**, at 2.30 p.m., at Burlington House, when Dr. A. Bailey will read a paper on "Use of Sensitised Metal in Engineering Design."

The annual general meeting of the Leeds area section of the Royal Institute of Chemistry will take place on **November 6**, at 6.30 p.m., the president, Professor Alexander Findlay will visit the section.

Mr. S. Baier and Mr. R. M. Angles will speak on "Electrodeposition of Tin-Copper Alloys, with special reference to Speculum" at the next Birmingham meeting of the Electrodepositors' Technical Association on **November 7** at 6 p.m., in the James Watt Memorial Institute, Great Charles Street.

The North-Western section of the Institute of Fuel meets at the Engineers' Club, Manchester, on **November 8**, at 2.30 p.m., when a Brains Trust on "The Efficient Utilisation of Industrial Waste and Town's Refuse" will occupy the attention of its members.

A joint conference of the Chemical Engineering Group, the Agriculture Group (Society of Chemical Industry), and the Institution of Chemical Engineers on Grass Drying will be held at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, on **November 14**, at 2 p.m. The following papers will be delivered: "Grass Drying—Chemical Aspects," by Dr. S. J. Watson; "Grass Drying—Engineering Aspects," by Mr. A. Goldberg and Mr. A. C. Bartelli; "Grass Drying—The Farmer's Viewpoint," by Mr. D. Fairclough.

## Company News

Manganese Bronze & Brass, Ltd., declare an interim dividend of 7½ per cent. (same).

Collective Exchange, Ltd., Tenterden, Kent, have changed their name to Kent Chemical Co., Ltd.

**Lobitos Oilfields, Ltd.**: dividend 12½ per cent. for 1943 (same). Net profit: £155,884 (£170,614).

**Triplex Safety Glass, Ltd.**: dividend 15 per cent. for year ended June 30 (10 per cent.). Net profit, before tax, £143,522 (£120,738).

**W. & J. George, Ltd.**, chemical and physical apparatus manufacturers, etc., Birmingham, have changed their name to W. & J. George & Becker, Ltd.

**Trinidad Petroleum Development, Ltd.**: final dividend 10 per cent., making 15 per cent. for year ended July 31 (same). Net profit: £182,340 (£183,974).

**Celactite & British Uralite, Ltd.**, have increased their capital by the addition of £10,000 in 2s. shares beyond the registered capital of £60,000.

**Trinidad Consolidated Oilfields, Ltd.**, report a loss for the year to March 31, of £17,383 (£8,591). The adverse balance brought in increased from £131,402 to £148,795.

**Sadier & Co., Ltd.**, report a trading profit, for year ended June 30, of £10,876 (£16,115); net profit: £4885 (£3699). Dividend on ordinary 7 per cent. (5 per cent.). Forward: £2900 (£3133).

## Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for errors that may occur.

### Mortgages and Charges

(Note.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every company shall, in making its Annual Summary, specify the total amount of debt due from the company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an \*—followed by the date of the Summary, but such total may have been reduced.)

**GRAHAM TATFORD & CO., LTD.**, Portsmouth, manufacturing chemists. (M., 28/10/44.) October 4, £300 (not ex.) and £900 (not ex.) mortgages, to Lloyds Bank, Ltd.: charged respectively on 31 Curtis Terrace, Fratton, and 1 Milford Road, Fratton.

### Receiving Order

**CHARLES L. MOORES & CO.**, chemists, 11 Bromsgrove Street, Birmingham. (R.O., 28/10/44.) Receiving Order, October 12. Creditor's Petition.

## New Companies Registered

**Parisepsin, Ltd.** (390,414).—Private company. Capital: £500 in 500 shares of £1 each. Manufacturers of and dealers in anti-septics, disinfectants, insecticides, drugs, detergents, etc. Subscribers: E. A. Tooley.

H. C. Baxter. Registered office: 5 Victoria Street, London, S.W.1.

**B. G. I. Plastics, Ltd.** (390,516).—Private company. Capital: £500 in 500 shares of £1 each. Manufacturers of and dealers in plastic and other goods, engineers, treaters and manipulators of goods with plastic or cellulose or similar materials, research chemists, etc. Directors: R. G. Kennedy; W. B. Bush; C. A. Jay. Registered office: Ethylex Works, Prestwich Clough, Prestwich, Manchester.

## Chemical and Allied Stocks and Shares

A MAIN feature of stock markets this week has been continued firmness in British Funds, although the volume of business generally has been small. Home rails lost part of their recent rally, but industrials showed only small movements and were quite well maintained on balance. Investment demand strengthened prices in some instances. Imperial Chemical, for instance, were firmer at 38s. 4d., as were Turner & Newall at 80s. 3d., Dunlop Rubber at 46s. 6d., and British Oxygen at 88s. Borax Consolidated were steady at 33s. 3d., British Aluminium 47s., and British Match 40s. 3d., while Pinchin Johnson improved to 38s. 3d. Wall Paper deferred units were higher at 48s. and continued firm, sentiment having continued to benefit from the good improvement in profits, despite the decision once more to limit the dividend to 4 per cent. The company has a particularly strong balance-sheet position, and the general assumption is that after the war dividends may very well return gradually to pre-war levels. This explains why the deferred units are valued on a basis showing a yield of less than 2 per cent. at the current price. Triplex Glass were 44s. xd.; this is another instance where there is only a small yield, reflecting the strong balance-sheet and expectations that as time proceeds the pre-1940 level of dividends will be restored. Lever & Unilever remained under the influence of the full results and were 45s. 6d., with Lever N.V. 45s. 9d.

Elsewhere, the units of the Distillers Co. have been firm at 106s. 3d. United Molasses were 37s. 3d., and British Plaster Board showed activity around 39s. On the other hand, cement shares were reactionary on news of the closing down of various small cement works. Associated Cement moved back to 61s. 6d., British Portland Cement to 98s. 9d., and Tunnel Cement to 48s. 9d., but selling appeared to be on a moderate scale. Elsewhere, Burt Boulton were steady at 24s. 6d. pending the dividend, Cellon 5s. ordinary 25s., British Drug Houses 27s., W. J. Bush 63s. 9d., and B. Laporte 82s. Lawes Chemical 10s. shares

were 13s.; the dividend announcement is due shortly. Elsewhere, R. A. Lister improved to 82s. on market talk of a possible increase in dividend.

Tube Investments showed firmness at 96s. 6d., awaiting the financial results, while Stewarts & Lloyds deferred strengthened to 55s. In other directions, Allied Ironfounders were 51s. 9d. and Amalgamated Metal 18s. 9d., and Murex held their improvement to 96s. 3d. General Refractories eased to 16s. 7½d. J. Brockhouse were 77s. 3d., and Imperial Smelting 14s. 4½d. Nairn & Greenwich eased slightly to 73s. 1½d., and Barry & Staines at 52s. 6d. also lost part of an earlier improvement. Neepsend Steel 5s. ordinary units continued firm at 32s. at which the yield is 7½ per cent.; the recently-issued results showed the 50 per cent. dividend to have been earned by a margin sufficient to have paid nearly 20 per cent. additional. Results of Renold & Coventry Chain also created a good impression. The £1 ordinary shares at 45s. yield 4½ per cent. on the 10 per cent. dividend; the latter could have been nearly 21½ per cent. if profits had been fully distributed.

De La Rue were 195s., Erinoid 11s. 3d., and British Industrial Plastics 2s. shares 7s. 1½d. Boots Drug have been steady around 55s. 6d., while Timothy Whites improved further to 40s. 10½d., and Sangers were 28s. 6d. Fisons ordinary were 49s., Monsanto Chemicals 5½ per cent. preference 23s. 6d., and Greeff-Chemicals 5s. ordinary again 8s. Textile shares showed small movements, Courtaulds easing to 54s. 9d., and British Celanese to 28s. 3d., with Bradford Dyers 23s. 3d., and Calico Printers 16s. Oil shares were little changed; "Shell" improved to 82s. 6d.

## British Chemical Prices

### Market Reports

A MODERATE volume of new business spread over a fairly wide range of products has been reported on the London chemical market during the past week, and deliveries against orders are well up to schedule. The general stability of prices continues to be a prominent feature of the market and the undertone remains firm. In the soda products market chlorate of soda is maintained at recent levels and the demand absorbs the quantities available. Both Glauber salt and salt cake are moving into consumption in good quantities with prices unchanged. Nitrite of soda is steady and the phosphates of soda are attracting attention and additions to order-books have been made. Yellow prussiate of soda is on offer only in relatively small quantities and quotations are very firm in consequence. There is no change in the general position of bi-

chromate of soda and a steady demand by priority users continues to be experienced. In the potash section the demand for permanganate of potash is on steady lines and quotations keep very strong. Caustic potash is available only in limited quantities, while yellow prussiate and bichromate of potash are being absorbed to the full extent of the offers, which continue scarce. There are no changes to report from the coal-tar products market, where a steady trade is reported.

**MANCHESTER.**—A moderate flow of new inquiries on the Manchester market for heavy chemicals during the past week has resulted in some additions to order-books. Prices keep steady to firm in pretty well all sections and a satisfactory feature is that delivery specifications are circulating fairly freely in most of the bread-and-butter lines, including the alkalis. Most of the potash products remain in limited supply and meet with a steady demand. The fertiliser trade is showing a good seasonal expansion. Among the tar products pitch is being taken up in fair quantities by home users, while a steady demand is reported for crude tar and creosote oil. There is no pressure at the moment for the xylools and naphthas so far as new business is concerned, but benzol is in good demand.

**GLASGOW.**—In the Scottish heavy chemical trade there is no change to report from last week, home business remaining very steady. Export inquiries are rather limited. Prices keep very firm with no actual changes to report.

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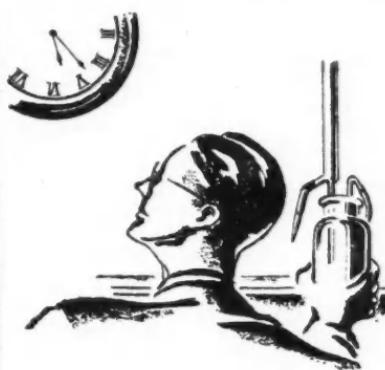
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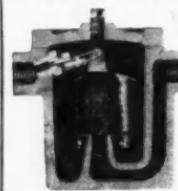
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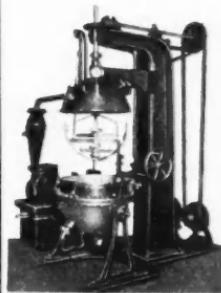
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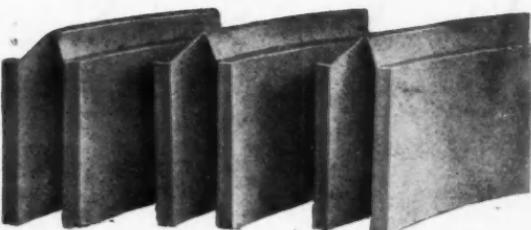
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